the subject is decidedly one of those social acquirements of highly transmissible nature, its present features being more the result of the national intercourse than that of the race-affinity.

KUMAGUSU MINAKATA.

15 Blithfield Street, Kensington, August 31.

Mr. Love's Treatise on Elasticity.

HAVING now returned to England, I have had an opportunity of examining my paper on wires (Proc. Lond. Math. Soc. vol. xxiii.), and I find that the discrepancy between my results and those given by Mr. Love, on p. 169 of his book, is due to a slip in my own work. On comparing my equations (11 and 15), it will be seen that in the latter equation the term $-\rho(\sigma\rho - \sigma r \cos\theta)^{-1}dw'/d\theta$ has been omitted. The value of w' is correctly given by equation 31, and when the omitted term is inserted in equation 32, the resulting value of g will be found to lead to values of the couples identical with those given by Mr. Love.

As I am strongly of opinion that the best way of constructing a satisfactory theory of shells and wires is to use the method of expansion, coupled with the hypothesis that all stresses which vanish at the surface may be treated (to a certain degree of approximation) as zero throughout the substance of the shell or wire, I am exceedingly glad to find that the apparent discrepancy is due to a small slip in my work, and not to any defect in the principles upon which the investigation is based. The question as to the values of the couples may now be considered to be completely settled.

A. B. BASSET.

September 28.

New Caledonian Pottery.

I AM extremely anxious to be informed on a little matter, and you are my only resource. In the *Journal of the Anthropological Institute*, August, 1893, vol. xxiii. page 90, Mr. J. J. Atkinson describes the making of New Caledonian pottery. The ingenious device of the pebble as a pivot is interesting. But Mr. Atkinson always says *he*. Do the men make pottery in New Caledonia, or is this a case of what the country school teacher termed the men embracing the women?

Washington, September 17.

OTIS T. MASON.

SCIENCE IN THE MAGAZINES.

AMONG the articles of scientific interest in the magazines received by us, is one in the *Contemporary Review*, in which Prof. Weismann replies to Mr. Herbert Spencer's attack upon his views as to the distinction in the Metazoa between somatic and reproductive cells, and on the immortality of the latter, and of unicellular organisms. With regard to the experiments that have been made with a view to proving the occurrence of telegony, Prof. Weismann says:—

> Herr Lang, of Stuttgart, has for twenty years experimented with dogs, without, however, ascertaining "a single fact that could be made use of for the advancement of the infection theory." Of course, in such a case negative results prove nothing; and the attempt must be made to determine the truth by new experiments. But as hitherto there have been no positive results from the observations that have been made; and as the most competent judges, namely, breeders who have a scientific knowledge, such as Settegast and Nathusius, and the late head of the Prussian Agricultural Station at Halle, Prof. Kühn, spite of their extensive experience in breeding and crossing, have never known a case of telegony, and therefore have great doubt as to its reality; it seems to me that *according to scientific principles, only the conformation of the tradition by methodical investigation, in this case by experiment, could raise telegony to the rank of a fact.*

In "A Note on Panmixia," Dr. Romanes attempts to remove any doubt that may exist in Mr. Spencer's mind as to whether Panmixia is a *vera causa* of degeneration, by showing that there are not excessive *plus* variations of an organ. Mr. Spencer had said, "If there are not excessive *plus* variations, the hypothesis of Panmixia is valid"—*ergo*, accepting Dr. Romanes' proofs, the doctrine is triumphant.

Mr. Robert H. Scott writes on "Weather Forecasts" in the *New Review*. He describes the difficulties that beset the weather prophet on all sides, and the various proposals that have been made for gathering in information which would increase their trustworthiness. Some of the proposals, *e.g.* the mooring of signal-ships in mid-Atlantic, are purely visionary, and intelligence directly received from stations in the United States or Canada is practically useless, for the condition of the atmosphere is constantly changing, and the rates at which storms cross the Atlantic vary considerably. The fact that the storms that visit us pass to the northward of the Azores would render those islands of little use to the Meteorological Office, even if a cable were laid to them; and all anticipations as to the advantages to be derived from mountain observatories remain unfulfilled, according to Mr. Scott. However, an examination of the results of forecasts prepared at 8 p.m. from 1879 to 1891 is fairly satisfactorily. Taking the eleven districts of Great Britain and Ireland, for which forecasts are made, it appears that, during the period mentioned, an average of 45·5 per cent. of the forecasts were entire successes, and 34·8 partial, thus giving a total of 80·3. Of the failures, an average of 6·6 per cent. were total and 13 per cent. partial. England (South) showed the highest rate of fulfilment, viz. 85 per cent., counting entire and partial successes together. "The least successful districts are, in order of their figures, the West of Scotland, the South of Ireland, and then the North of Ireland, and the North-west of England. The least successful forecasts are therefore our exposed west and north-west coasts."

Other articles of a scientific character in the *New Review* are: "Are we Prepared to Resist a Cholera Epidemic?" by Mr. Adolphe Smith, and "The Increase of Cancer," by Mr. H. P. Dunn.

Under the title "Atoms and Sunbeams" Sir Robert Ball gives, in the *Fortnightly Review*, a description of Helmholtz's shrinkage theory of the maintenance of the sun's heat, with particular reference to the "precise *modus operandi* by which, as the active potential energy vanishes, its equivalent in available heat appears." "Electric Fishes" is the subject of an article by Dr. McKendrick, and in it we find the investigations carried out by Fritsch, Bois-Reymond and Sachs, Burdon-Sanderson, and Gotch explained in an interesting manner. Before describing the minute structure of individual electrical organs the author makes the following remarks:—

> About fifty species of fishes have been found to possess electrical organs, but their electrical properties have been studied in detail only in five or six. The best known are various species of *Torpedo* (belonging to the skate family), found in the Mediterranean and Adriatic Seas; the *Gymnotus*, an eel found in the lagoons in the region of the Orinocco, in South America; the *Malapterurus*, the räash, or thunderer-fish, of the Arabs, a native of the Nile, the Niger, the Senegal, and other African rivers; and various species of skates (*Raia*) found in our own seas. It is curious that the Nile is rich in electrical fishes, several species of pike like creatures (*Mormyrus* and *Hyperopisus*) possessing electrical organs the structure of which has been quite recently investigated by Fritsch. The electrical fishes do not belong to any one class or group, and some are found in fresh water, while others inhabit the ocean.
>
> Two distinct types of electrical organs exist. One is closely related in structure to muscle, as found in the torpedo, gymnotus, and skate, while the other presents more of the characters of the structure of a secreting gland, as illustrated by the electric organ of the thunderer-fish. Both types are built up of a vast number of minute, indeed microscopical, elements, and each element is supplied with a nerve fibre. These nerve fibres come from large nerves that originate in the nerve centres—brain, or spinal cord—and in these centres we find special large nerve-cells with which the nerve fibres of the electric organ are connected, and from which they spring. We may, therefore, consider the whole electric apparatus as consisting of three parts: (1) electric centres in the brain or spinal cord; (2) electric nerves passing to the electric organ; and (3) the electric

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organ itself. It must not be supposed, however, that the electricity is generated in the electric centres, and that it is conveyed by the electric nerves to the electric organ. On the contrary, it is generated in the electric organ itself, but it is only produced so as to give a "shock" when it is set in action by nervous impulses transmitted to it from the electric centres by the electric nerves.

The *Humanitarian* contains a revised form of the paper on "Cremation" read at the Edinburgh meeting of the British Institute of Public Health by Sir Spencer Wells.

Mr. Geoffrey Winterwood writes on "Mars as a World" in *Good Words*, his article being based in the main upon Camille Flammarion's recent work on Mars and its conditions of habitability. The article is brightened by nine excellent illustrations. "The Cold Meteorite" is the title of a poem by Mr. W. R. Huntingdon in the *Century Magazine*. The meteorite is thus apostrophised:—

> "far better 'tis to die
> The death that flashes gladness, than alone
> In frigid dignity to live on high;
> Better in burning sacrifice be thrown
> Against the world to perish, than the sky
> To circle endlessly, a barren stone."

HYDROPHOBIA STATISTICS FOR 1892 *AT THE INSTITUT PASTEUR.*

An account of the anti-rabic vaccinations undertaken last year in the Pasteur Institute in Paris has been recently published (*Annales de l'Institut Pasteur*, vol. vii. p. 335, 1893). From the statistics here given it appears that no less than 1790 persons underwent this treatment during the past year in Paris alone, and that out of these only four subsequently died from rabies. In 600 of these cases the bites were attributed to animals suspected of suffering from hydrophobia at the time, but in all the others the certainty was established by subsequent veterinary examination, as well as by the death from rabies of other animals bitten by the animal in question.

Since the beginning of the Pasteur treatment in 1886, the mortality from bites on the head after treatment is stated as 1.48 per cent., from wounds on the hands 0·55, and 0·24 per cent. from bites on the limbs.

Thus by far the most serious cases are those in which the head is attacked, and it is pointed out how unfortunate is the delay which frequently occurs between the wound and the arrival of the patient for treatment, the interval militating most seriously against the success of the subsequent inoculations.

The following table indicates the nationality of the patients admitted to the Institute during the past year:—

England	26
Belgium	11
Egypt	12
Spain	14
Greece	19
United States	1
Portugal	96
Russia	1
Switzerland	3
Holland	14
India	9
France and Algeria	1584

Algeria is specially mentioned as being amongst those districts from which the largest number of cases are yearly sent to the Institute.

Last year a patient came from Madeira, rabies having been imported for the first time into the island by a dog from Portugal.

A most unusual occurrence is drawn attention to, viz. the death of a patient, a young Englishman, treated in 1887, and who died last year, five years therefore later, of rabies. Such an exceptional case has not been met with since the commencement in 1886 of the anti-rabic inoculations, which up to the present number 12,782.

Taking the average of cases received during the past six years, rabies appears to reach a maximum in the spring and a minimum in the autumn.

NOTES.

The Harveian Oration will be delivered by Dr. P. H. Pye-Smith, at the Royal College of Physicians, at four o'clock on Wednesday, October 18.

The vacancy in the Mineralogical Department of the British Museum, occasioned by the death of Mr. Thomas Davies, has been filled by the appointment by the trustees of Mr. Leonard J. Spencer, of Sidney Sussex College, Cambridge, who gained the first place at the competitive examination.

Through the munificence of Mr. F. Duncane Godman, F.R.S., a botanical exploration of the island of St. Vincent was made by Mr. Herbert H. Smith and Mr. G. W. Smith in 1889 and 1890. The plants then collected, and those from St. Vincent previously in the Kew Herbarium, have now been arranged, and the resulting catalogue constitutes the *Kew Bulletin* for September (No. 81). All the 977 plants collected by the Smiths are included, whether indigenous or naturalised, and, in addition, 179 flowering plants and 24 ferns not collected by them. We read that, "with regard to the general distribution of the indigenous plants, the principal points are the wide geographical range of the majority, and the smallness of the endemic element, conditions that obtain throughout the whole chain of islands from Tobago to the Virgin group, which are in striking contrast to the proportions of the endemic element in Cuba and Jamaica. . . . . The fern vegetation is very rich and varied, and, in relation to the area, far in excess as to number of species to that of New Zealand, which is generally regarded as one of the most highly concentrated

We learn from the *Pioneer Mail* that Mr. Dallas, Assistant Meteorological Reporter to the Government of India, leaves shortly for Madras, in order to assist the authorities in starting a daily weather report in that Province.

Dr. Henry B. Ward, of Michigan University, has been appointed Associate Professor of Zoology to the University of Nebraska, Lincoln, Nebr.

Dr. E. Symes Thompson will lecture upon the voice, at Gresham College, Basinghall Street, on October 10, 11, 12, and 13. The lectures are free to the public, and commence each evening at six o'clock.

A very brilliant meteor was seen about 9.45 last night at Leicester (says the *Times* of October 2). It seemed to burst from near the zenith, and proceeded towards the western horizon, increasing very rapidly in brilliancy, until the ground and atmosphere were lit up so that objects in the landscape could be clearly seen at a long distance for several seconds. Mr. H. Cook, of the Birmingham and Midland Institute, says that the meteor was also seen at Neen Sollars, near to Cleobury Mortimer, Salop, at the above-mentioned hour.

Dr. O. Loew, of Münich, well known for his investigations of the nature of protoplasm in connection with Dr. T. Bokorny, has been appointed Professor of Agricultural Chemistry in the University of Tokio, Japan; and Dr. D. Brandis, a fellow of our Royal Society, Professor of Forestry in the University of Bonn.

In two recent numbers of the *Botanisches Centralblatt* is a detailed account, by Dr. F. v. Herder, of the Herbaria and Botanical Museums in St. Petersburg. Of these, five in number besides private collections, the richest and most important

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